



# Prevalence of Low Back Pain Among Traffic Wardens in Lagos State, Nigeria

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## SUMMARY

Low back pain (LBP) has been found to be common among workers in certain industries and occupations. However, little is known about the prevalence of low back pain among traffic wardens in Nigeria, who are perceived to belong to the group of workers that are exposed to high occupational risks. This study was designed to determine the prevalence of low back pain and its associated risk factors among traffic wardens.

The study design was a cross-sectional descriptive survey. All subjects were evaluated using a 32-item questionnaire to collect information on the demographic characteristics, years of involvement in working as a traffic warden, history of LBP in the last 12 months, possible causes and management of LBP, and the effect of LBP on work and the activities of daily living. The intensity of the pain was assessed using a verbal rating scale.

The prevalence of low back pain over a 12-month period was observed to be 69.5%. The intensity was described as moderate (49.2%), mild (11.8%), or severe (8.6%). Eighty (61.5%) of the traffic wardens agreed that LBP constitutes some form of impediment to their job activities. There was a relationship between age and prevalence of low back pain, with age 35 – 54 years having the highest level of prevalence. Years of involvement in regulating traffic also has a significant influence on the severity of LBP. A higher prevalence was identified among males compared to females

This study concluded that low back pain is prevalent among traffic wardens and the female wardens are more susceptible than their male counterparts. Also, age and years of involvement in regulating traffic significantly influence prevalence of LBP.

**KEY WORDS:** low back pain, traffic warden, occupational health

## INTRODUCTION

Low back pain (LBP) is the most prevalent musculoskeletal condition and a major cause of disability in society (Woolf and Pfleger, 2003). Low back pain also known as lumbago is a common musculoskeletal disorder affecting 80% of people at some point in their lives. It is currently one of the most common musculoskeletal problems affecting the human population (Waddell and Burton, 2001). In the United States of America, it is the most common cause of job-related disability and a leading contributor to absenteeism from work (Woolf and Pfleger, 2003; Louw

et al., 2007).

Among the different types of musculoskeletal disorders, low back pain has been described as the most prevalent and the most common cause of disability in developed nations (Woolf and Pfleger, 2003; Louw et al, 2007). It has been estimated that half of the patients seen in physiotherapy out-patient departments suffer from low back pain. The severity of this musculoskeletal condition ranges from mild back strain to the gruesome pain that may incapacitate a person and prevent them from working as well as living a healthy life.

Epidemiological studies have shown that occupations that involve long periods of standing have a strong association with low back pain, with the perceived level of LBP increasing as the length of standing time increases (Andersen et al., 2007, Roelen et al., 2008). Known occupational risk factors such as heavy lifting, twisting, pulling, pushing, bending, stooping, prolonged sitting, standing and awkward postures at work are associated with low back pain (Eriksen et al., 2004; Vindigni et al., 2005).

Prolonged standing may be classified as a task component with low physical demand; however epidemiology studies have shown a strong association between prolonged standing and low back pain (Andersen et al., 2007). Therefore, the purpose of this study was to investigate the prevalence of low back pain among traffic wardens in Lagos State, who assume a standing position for long periods of time on a daily basis.

## **MATERIAL AND METHODS**

### **Participants**

A total of two hundred (200) traffic wardens under the Lagos State Traffic Management Authority (LASTMA) were recruited to participate in this study. They were selected from various traffic control points across the metropolis in Lagos State, South West Nigeria using the purposive sampling technique.

### **Questionnaire design**

The questionnaire titled "Prevalence of low back pain among traffic wardens (LBP) questionnaire" was adopted from a previous related survey on low back pain (Omokhodion, 2002). Three copies of the questionnaire were sent to physiotherapists to ascertain content validity, and adjustments were made based on their observations. The questionnaire consisted of 32 close-ended questions and was divided into 5 sections. Section A sought information on the demographic characteristics of participants, which included age, sex, marital status, years of working as a traffic warden and highest level of educational qualification. Section B was used to obtain information on back pain and its pattern in the last 12 months, duration, onset, location, frequency, and nature of low back pain.

Section C sought information on the possible causes of low back pain, association between the pain and different

postures/activities, postures the participants believed increased or relieved their back pain, and the period of the day at which the low back pain was relieved or worsened. Section D was used to obtain information on how the participants manage their low back pain. Section E sought information on the effect of low back pain on work activities and the activities of daily living.

### **Administration of the Questionnaire**

Prior to the commencement of this study, approval was sought and obtained from the Health Research and Ethics Committee of the Lagos University Teaching Hospital, Idi-Araba, Lagos, Nigeria. Informed written consent was sought and obtained from the Lagos State Traffic Management Authority Headquarters, Oshodi, Lagos.

Copies of the questionnaire were then distributed to the participants by the researcher through personal visits to various traffic control points across the Lagos metropolis. The purpose of the study was clearly explained to all the participants before administering the questionnaire. All subjects were evaluated by a face-to-face interview technique using a questionnaire form, including demographic and clinical information (age, sex, marital status, educational qualifications, onset, episode and nature of low back pain). Following the administration of the questionnaire, a verbal rating scale (VRS) for pain intensity was administered.

## **DATA ANALYSIS**

The data collected were analysed using the SPSS version 17. The results were presented using descriptive statistics: mean, standard deviation, frequency, percentages and bar chart. The chi square test was utilized in exploring the association among variables. The significant level was set at  $p \leq 0.05$ .

## **RESULT**

Two hundred (200) questionnaires were distributed, out of which 187 were returned, giving an 82.0% response rate. The majority of the study population, 136 (72.7%), were male and the mean age was  $38.22 \pm 2.98$ . Most of the respondents, 156 (83.4%), were married, while one was divorced and another one was widowed. Only sixty-eight respondents (36.4%) had university education (table1).

**Table 1.** Demographic characteristics of the respondents

	Frequency (n)	Percentage (%)
<b>Age (years)</b>		
<25	5	2.7
25 – 34	45	24.1
35 – 44	107	57.2
45 – 54	25	13.4
54 – 64	5	2.7
<b>Total</b>	<b>187</b>	<b>100</b>
<b>Sex</b>		
Male	136	72.7
Female	51	27.3
<b>Total</b>	<b>187</b>	<b>100</b>
<b>Marital Status</b>		
Single	29	15.5
Married	156	83.4
Widow	1	0.5
Divorced	1	0.5
<b>Total</b>	<b>187</b>	<b>100</b>
<b>Educational qualification</b>		
Non formal	2	1.1
Primary	3	1.6
Secondary	57	30.5
Non university	38	20.3
University	68	36.4
Postgraduate	19	10.2
<b>Total</b>	<b>187</b>	<b>100</b>

**Prevalence of Low Back Pain**

Out of the 187 traffic wardens who participated in this study, 130 (69.5%) reported experiencing low back pain during the last 12 months preceding this study, out of which 97 (74.60%) were male and 33 (25.38%) were female representing 71.9% and 64.7% of the total number of male and female respondents respectively (table 2).

**Table 2.** Twelve-month prevalence of low back pain

History of LBP	Male		Female		$\chi^2$	p- value
	n	%	n	%		
Previous H <sub>1</sub>	97	71.9	33	64.7		
No Previous H <sub>1</sub>	38	29.1	18	35.3	0.898	0.343
<b>Total</b>	<b>135</b>	<b>100</b>	<b>51</b>	<b>100</b>		

\*Significant different at  $p \leq 0.05$

**Onset, Nature, Episode and Duration of LBP**

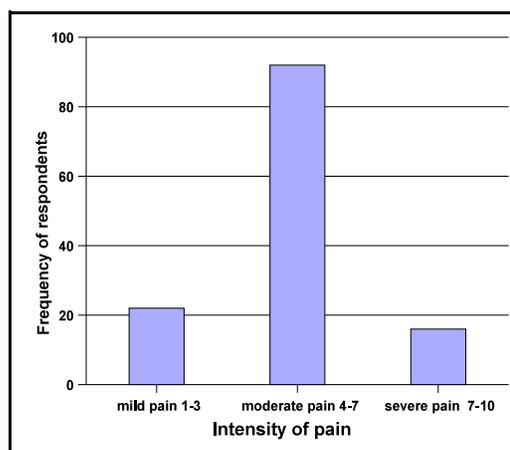
One hundred and five (80.7%) participants reported that

the pain started gradually, while 25 (29.3%) reported sudden onset. The report on duration of low back pain showed that the majority of the traffic wardens, 88 (67.7%), were in the acute phase (< 6 weeks) (table 3).

**Table 3.** Onset, nature, episode and duration of LBP in respondents

Variables	Frequency (n)	Percent (%)
<b>Onset of LBP</b>		
Gradual onset	105	80.7
Sudden onset	25	29.3
<b>Episodes of LBP</b>		
1 time	20	15.3
2-5 times	71	54.6
Greater than 5 times	38	29.2
<b>Nature of LBP</b>		
Dull pain	44	33.9
Sharp pain	86	66.1
<b>Duration</b>		
< 6 weeks	88	67.7
Between 6 – 12 weeks	28	21.5
> 12 weeks	14	10.8

The severity of the pain felt was rated using a verbal rating scale (VRS). Out of the 187 traffic wardens who responded, 92 (49.2%) had moderate pain, 22 (11.8%) had mild pain and 16 (8.6%) had severe pain (figure 1).



**Figure 1.** Pain rating of participants

Table 4 showed the relationship between the years of involvement in traffic control activities and the 12-month prevalence of low back pain. It was shown that years of traffic officiating had a significant influence on the

prevalence of low back pain ( $P = 0.001$ ). Traffic wardens who have served under LASTMA for seven years or more had the highest prevalence of LBP.

**Table 4.** Years of involvement in traffic control activities and 12-month prevalence of low back pain

Years of Involvement	Previous Hx of LBP		No of previous Hx of LBP		$\chi^2$	p-value
	n	%	n	%		
1	1	50	1	50		
2	8	42.1	11	57.9		
3	17	65.4	9	34.6		
4	3	33.3	7	66.7		
5	21	75	7	15	30.161	0.001
6	8	50	8	50		
7	12	85.7	2	14.3		
8	10	76.9	3	23.1		
9	9	100	0	0		
10	20	76.9	6	23.1		
11	17	89.5	2	10.5		
12	4	100	0	0		

\*Significant difference at  $p \leq 0.05$

Key: LBP = Low Back Pain; Hx = History

### Self-reported Factors and Activities/Postures Aggravating and Relieving LBP Among Respondents

Eighty-two (63.1%) of the traffic wardens indicated that the traffic officiating job they do is responsible for their LBP, while 48 (36.9%) attributed their LBP to medical problems. The two major postures stated by participants as relieving pain were sitting, 32(24.6%) and lying 52 (40%).

The activities indicated as possible causes of LBP were prolonged standing, 105 (80.7%), poor posture, 6 (4.62%), years of service, 11 (8.45%), previous injury, 3 (2.31%), age, 3 (2.31%) and accident, 2 (1.54%).

### Relationship Between Age, Years of Involvement and Severity/Prevalence of LBP

Table 5 shows the relationship between age and prevalence of LBP with participants aged 35 – 54 years having the highest level of prevalence; the p-value of 0.021 shows that there is a significant relationship between age and a 12-month prevalence of LBP. In table 6, the p-value of 0.032 shows that years of involvement in traffic officiating has a significant influence on the severity of LBP.

**Table 5.** Relationship between age and 12-month prevalence of LBP among the respondents

Age (years)	Hx of LBP		No Hx of LBP		$\chi^2$	P value
	n	%	n	%		
< 25	3	60	2	40		
25 – 34	24	53.3	21	46.7		
35 - 44	79	73.8	28	26.2	11.533	0.021
45 - 54	22	88	3	12		
55 - 64	2	50	2	50		

\*Significant difference at  $p \leq 0.05$

Key: LBP = Low back pain; Hx = History

**Table 6.** Relationship between years of involvement in traffic officiating and severity of LBP

Years of service	Mild (1 – 3)		Moderate (4 – 7)		Severe (8-10)		$\chi^2$	p-value
	n	%	n	%	n	%		
1 – 3	5	17.9	15	53.6	8	28.6		
4 – 6	10	31.2	20	62.5	2	6.25		
7 – 9	2	6.5	23	74.2	6	19.4	114.115	0.032
10 – 12	5	12.2	34	82.9	2	4.88		

\*Significant difference at  $p \leq 0.05$

## DISCUSSION

This study was designed to determine the prevalence of low back pain (LBP) as an occupational hazard among traffic wardens. The prevalence rates in this study are in agreement with a previous report (Owoeye, 1999) which stated that 80% of the population will suffer low back pain at one period or the other in their lives.

In the present study, the 12-month prevalence of LBP among the respondents was 69.5% and this suggests that low back pain is common among this group of subjects. This finding is in agreement with the submission by Ogunnowo et al. (2000) who observed a high prevalence of low back pain (69%) among nursing staff with prolonged standing as one of the contributing factors. A similar trend was observed in a study by Panada et al. (2011) among rice farmers in Thailand with a 12-month prevalence of 60%.

In this study, there was a significant relationship between age and 12-month prevalence of LBP among traffic wardens with age groups 35 – 44 years and 45 – 54 years having the highest level of prevalence. This is contrary to the result of the study carried out by Panada et al. (2011) who reported that age had no significant relationship with low back pain, but is in agreement with

the result of the study by Omokhodion (2002) which associated low back pain with age. It is also in agreement with Anderson (1999), who reported a significant relationship between LBP and increasing age, with the prevalence being highest between ages 35 – 55 years. This is probably due to the normal degenerative changes associated with aging.

The findings from this study revealed that 63.1% of the respondents thought their low back pain was related to the work they do. This finding is similar to the study carried out by Omokhodion (2002) in which the majority of the subjects (73%) related their LBP to the job they do. This might be as a result of the position assumed by the respondents while at work.

It was found out from this study that the majority of the respondents reported prolonged standing as the major cause of the low back pain they were experiencing. This is contrary to the study carried out by Ogunnowo et al. (2000) in which only 11% of the respondents reported prolonged standing as the perceived cause of their low back pain. This difference may be attributed to the fact that the respondents in the present study engage in more hours of standing than the respondents that participated in the study carried out by Ogunnowo et al. (2000).

According to Ogunnowo et al. (2000), low back pain was more prevalent among female respondents. Panada et al. (2011) also stated that this fact might be as a result of poor physical fitness in women. The result of this study is, however, contrary to this report, with male respondents having a higher prevalence of low back pain.

The majority of respondents in this study rated their level of pain as moderate using the visual analogue scale (VAS). This is contrary to the result of the study by Ogunnowo et al (2000) in which the majority of the subjects reported their level of pain as mild. This difference may be due to the fact that the respondents in the present study did not have the luxury of sitting down during duty hours due to job environment constrictions.

This study showed that traffic wardens (61.5%) had some difficulty in doing their job due to LBP and they were aware of the causes of their LBP; the majority (80.7%) stating prolonged standing as the major cause.

## CONCLUSION

There is a high prevalence of low back pain among traffic wardens in Lagos State, Nigeria. The majority of the

respondents in this study attributed their low back pain to traffic officiating and for most of these respondents, the level of pain was moderate.

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